1   1.   A method comprising:

2   focusing an imaging device over at least two

3   different focal lengths; and

4   forming an in-focus image including objects at

5   two different focal lengths.

1   2.   The method of claim 1 including automatically

2   focusing an imaging device to at least two different focal

3   lengths.

1   3.   The method of claim 1 including enabling the user

2   to manually adjust the imaging device to at least two

3   different focal lengths.

1   4.   The method of claim 1 wherein forming an in-focus

2   image includes evaluating the sharpness of portions of

3   images taken at two different focal lengths.

1   5.   The method of claim 4 including evaluating

2   sharpness on a pixel-by-pixel basis.

1   6.   The method of claim 5 including evaluating

2   sharpness on a pixel-by-pixel basis and storing sharpness

3   information in an alpha channel associated with each pixel.

1   7.   The method of claim 4 including comparing the

2   sharpness values of two captured frames and weighting

3   pixels having sharpness values indicating better focus more

4   than pixels having sharpness values indicating poorer

5   focus.

1   8.   The method of claim 7 including generating a

2   composite image containing image portions taken over at

3   least two different focal lengths by comparing the quality

4   of focus of two different image portions and weighting the

5   image portion with better focus.

1   9.   The method of claim 1 including transforming a

2   subsequent frame to match the characteristics of a previous

3   frame taken at a different focal length.

1   10.   The method of claim 9 including transforming the

2   size of one of two frames taken at different focal lengths.

1   11.   An article comprising a medium storing

2   instructions that enable a processor-based system to:

3   focus an imaging device over at least two

4   different focal lengths; and

5   form an in-focus image to include objects at

6   two different focal lengths.

1   12.   The article of claim 11 further storing
2 instructions that enable a processor-based system to
3 automatically focus an imaging device to at least two
4 different focal lengths.

1   13.   The article of claim 11 further storing
2 instructions that enable a processor-based system to enable
3 the user to manually adjust the imaging device to at least
4 two different focal lengths.

1   14.   The article of claim 11 further storing
2 instructions that enable a processor-based system to
3 evaluate the sharpness of portions of images taken at two
4 different focal lengths.

1   15.   The article of claim 14 further storing
2 instructions that enable a processor-based system to
3 evaluate sharpness on a pixel-by-pixel basis.

1   16.   The article of claim 15 further storing
2 instructions that enable a processor-based system to
3 evaluate sharpness on a pixel-by-pixel basis and store
4 sharpness information in an alpha channel associated with
5 each pixel.

1   17.   The article of claim 14 further storing
2   instructions that enable a processor-based system to
3   compare the sharpness values of two captured frames and
4   weight pixels having sharpness values indicating better
5   focus more than pixels that have sharpness values
6   indicating poorer focus.

1   18.   The article of claim 17 further storing
2   instructions that enable a processor-based system to
3   generate a composite image containing image portions taken
4   over at least two different focal lengths by comparing the
5   quality of focus of two different image portions and
6   weighting the image portion with better focus.

1   19.   The article of claim 11 further storing
2   instructions that enable a processor-based system to
3   transform a subsequent frame to match the characteristics
4   of a previous frame taken at a different focal length.

1   20.   The article of claim 19 further storing
2   instructions that enable a processor-based system to
3   transform the size of one of two frames taken at different
4   focal lengths.

1   21.   A system comprising:

2   an imaging device; and

3   a controller to focus the imaging device over

4   at least two different focal lengths and form an in-focus

5   image including objects at two different focal lengths.

1   22.   The system of claim 21 wherein said controller

2   automatically focuses the imaging device to at least two

3   different focal lengths.

1   23.   The system of claim 21 wherein said controller

2   accepts manual focal adjustments to the imaging device to

3   at least two different focal lengths.

1   24.   The system of claim 21 wherein said controller

2   evaluates the sharpness of portions of images taken at

3   two different focal lengths.

1   25.   The system of claim 24 wherein said controller

2   evaluates sharpness on a pixel-by-pixel basis.

1   26.   The system of claim 25 wherein said controller

2   evaluates sharpness on a pixel-by-pixel basis and stores

3   sharpness information in the alpha channel associated

4   with each pixel.

1   27.   The system of claim 24 wherein said controller

2   compares sharpness values of two captured frames and

3   weights pixels having sharpness values indicating better

4   focus more than pixels that have sharpness values

5   indicating poorer focus.

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1   28. The system of claim 27 wherein said controller
2 generates a composite image containing image portions
3 taken over at least two different focal lengths by
4 comparing the quality of focus of two different image
5 portions and weighting the image portion with better
6 focus.

1   29. The system of claim 21 wherein said controller
2 transforms a subsequent frame to match the
3 characteristics of a previous frame taken at a different
4 focal length.

1   30. The system of claim 29 wherein said controller
2 transforms the size of one of two frames taken at
3 different focal lengths.